

Potentially useful labview vis for running the undergraduate optical trap.

Position Calibration – Moves the stage in one axis while taking data from the QPD. The program will save only the data from the direction of motion (moving in X, only take X QPD data), even though it plots both X & Y data.

QPD Alignment Tester – Provides a realtime view of the X & Y QPD voltage signals. This is very useful for aligning the QPD, zeroing the voltage when there is a bead in the trap, or positioning a stuck bead at the center of the trap. The slide bar on the right allows one to set the axis range (always set as a square), autoscale will do the same, but continuously adjust the range.

Stokes Calibration – Alternates the picomotors between a run at a set velocity and a rest period. The average QPD signal for the axis of movement is obtained during both the movement and the rest period. These values are saved, and can be converted to displacements using the position calibration.

It can be noted that there aren't any vi's for equipartition or Lorentzian measurement – this is because the built in labview example vi called: Cont Acq to Spreadsheet File.vi is sufficient to capture the data for both.